BUG-BYTE SOFTWARE

BBC MICRO MODEL B

SPACE WAR

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Since BUG-BYTE has a continuing policy of software development, this program is subject to change without notice in order to improve it. Any ammendments will be detailed through the BEEBON magazine which also contains information on sophisticated programming techniques.

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Two copies of Space Warp are supplied, both at twelve hundred baud, as the most realistic format available. Dependent on the length of the tape on which the program is supplied, they will be found either both on one side or one on either side. Should problems be encountered with this format, a version at three hundred baud is available upon request.

LOADING INSTRUCTIONS

The recommended and the only guaranteed way to load this program is:-

```
PAGE=&1D00<RET>
NEW <RET>
CHAIN ""<RET>
or
PAGE=%1D00<RET>
NEW <RET>
CHAIN "SPACE-WARP"<RET>
```


Should PAGE be set incorrectly, catastrophic system failure will result

The loading process will first ask you to choose a scenario and difficulty level and then it will display a title screen. Whilst the main program loads you must follow the instructions on the screen exactlly with regards to the cassette recorder if you do not have remote control. It is most important that the cassette recorder is left running whilst the title screen is displayed and should only be switched off when the HELM CONSOLE display appears.

Although the program is specifically protected against interruption it may be possible to ESCAPE due to the limitations of some of the early versions of the M.O.S. If this should happen simply type GOTO 2000 <RET>. Correct program opperation under these circumstances is not guaranteed. Likewise, should the BREAK key be used and found to be operational, the program should be re-entered with PAGE =&1D00<RET>
GOTO 2000<RET>

SPACE WARP SIMULATOR

GUIDELINES FOR APLICANTS FOR PROMOTION TO STARSHIP COMMAND

It is assumed that the applicant for the position of inter-galactic upholder of the peace,class 1a,has passed all of the standard space invader,galaxian and other menial anti-alien simulations,so as to enable him to go forth into deepest,uncharted wastes of space with the fullest proficiency in hyper- spatial warfare techniques.

It is also assumed that the candidate is completely familiar with the control systems of the new cruiser class starships, and in particular their Byte-orientated Basic Controller computer (B.B.C.) and has studied its complete and detailed user manual as this is the primary interface between the commander and his starship.

The applicant is required to show the ability to control complex control and weaponry systems and to show the required aptitude in order to be judged both suitable for, and capable of the enormous responsibility inherent in the protection of the Federation's boundaries from the dual menaces of lawlesness and alien aggression.

It is with these factors in mind that those aspiring to the giddy heights of the rank of captain and commander of a starship in the Federation Deep Space Fleet are provided with this, the most sophisticated and complete starship simulator yet devised in this quadrant of the galaxy and instructed to prepare for the

penultimate test - starship command in space, the final frontier.

SCENARIO SELECTION

In order to provide realistic training, this simulator provides six scenarios representing realistic situations, which the applicant may be required to deal with in active service. Although each must be dealt with in a manner appropriate to the applicant's individual understanding of the situation as it occurs, a brief historical background is provided on each in order to stimulate the imagination.

1:-The Organian Rim intrusion (Klingon invasion)

During the outward expansion of the United Federation of Planets into the great Perseus arm of the galaxy, a large number of outposts were established at the rim of explored space in order to encourage trade and colonisation. Principal explorers of this area were the Star Empire of Epsilon Indi new members of the Federation and eager to show an industrious approach to civilising the great wastes.

All went well for some thirteen Earth years, and then suddenly, contact with the outermost outpost was lost. Fearing some strange epidemic of disease, the U.S.S. Constellation, a destroyer class II starship, which was on routine patrol in the area was dispatched to investigate. When within twelve parsecs of its destination, the starship reported that it was being attacked by strange alien ships, and then all transmissions ceased. Enough information was received to identify the aliens as Klingons who had already given minor trouble in areas nearer the galactic hub, although never as serious as outright warfare.

As the starship Constellation was able to send a considerable amount of information back through zonal relay stations, it became apparent that not only had the Klingons aquired the knowledge to install focussed high energy weapons in their ships, but also had an effective warp drive. The resulting spacecraft was nicknamed the " Warbird " throughout the fleet because of its stark appearance which looked hauntingly like a huge bird.

The large Klingon fleet had caught Starfleet command uncharacteristically napping, as most of the fleet was on manouvers several thousand parsecs away on the far side the principal stellar systems. The only starship of any great power anywhere near the rim was the U.S.S. Intrepid, a MK 4 heavy cruiser. As the formidable Klingon fleet sped inwards towards the almost defenceless home stars all that stood between civilisation and a new dark age was just this one lone cruiser.

2:- The Romulan incedent

Outward of the Orion arm of the galaxy, a series of eight outposts shielded the colonies from the worst ravages of

interstellar lawlessness. These settlements where located at the

edge of the great wastes that separate the Rim from the Orion Nebula and which many expeditions had tried to cross and perished in the attempt.

It was across these wastes that it is believed the dreaded Romulan Intruders came. Travelling alone, these fearsome warships attacked military installations and shipping,and showed great cunning in the execution of their activities.

Starfleet Command quickly came to the conclusion that from the pattern of the hostilities instigated, the attacks could only be a prelude, a softening up and intelligence gathering operation, before a major invasion. The starship Alliance whilst on routine patrol became aware of a large number of solo intrusions within a small area, and on contacting starflet command centre was ordered into action in order to provide a show of strength. It was widely believed that a major success by a single starship might discourage a full Romulan invasion by proving the Federations overwhelming technological superiority in terms of military strength.

3:-The great galactic war

It has been decided by the training authorities to include this scenario for completeness. It must hopefully remain pure speculation on the likely course of events which would lead up to a state of unbridled and open hostilities between the races of the galaxy. However, as a starship commander, the applicant must be prepared for all eventualities. When this simulation is encountered, the candidate is required to file all relevant data gathered during this scenario for further reference and study by the strategic council as a possible future happening.

4:-A Piracy Outbreak

This is the bread and butter work of most Federation starships as piracy is rife in the great interstellar wastes and represents what is arguably the greatest threat to the continued peace and prosperity of the galaxy. Most fleet personell will encounter piratical activities during most tours of duty, and learning how to contain these outbreaks and swiftly deal with the perpetrators is a very neccassary requirement.

In the sparsely populated region of Cestius III a small white dwarf star which is the centre of the area's trade a local merchant and personality by the name of D'rakanthon Badenik was charged by the authorities whith embezelement and tax frauds. Escaping by a fast scout which he kept hidden amongst the foliage of his rooftop garden, especially for this type of emergency, and pausing only long enough to collect the illicit funds held by shady but secure bankers, he fled to some unspecified and uninhabited worlds nearby.

Within a short space of time he had organised the local criminals and had instigated an organized outbreak of piracy. Avoiding capture by the local militia, and fueled by success, he soon became a major source of embarassment to the Federation by attacking a military convoy and stealing a shipment of dylithium crystals, destroying three scouts ships in the process.

The major problem with his aprehension was the very large number of ships under his control and direction, and the way they masqueraded as innocent traders. Accordingly, the starship Imperrium was despatched to deal with the outbreak and bring Badenik to justice and a summary execution.

5:-Into the unknown

Because of the enourmous size of the galaxy, there are still many regions on the federation boundaries which are considered interesting enough for full scale exploration. Because of the risk of hostile alien forces within these areas, and their usage by the criminal elements for safe hiding places, it is usual practise to send a starship into the region being investigated in order to secure the safety of the scientific personnel following. This is an excellent test of aptitude and is usually assigned to new personell looking for experience.

6:-Routine patrol

Normally the first assignment for candidates. The variety of incidents such a patrol will encounter are many and varied, although they are never usually either difficult or dangerous.

POSSIBLE OPPONENTS

1:-KLINGONS

The Klingons are the deadliest menace ever faced by the Federation. Extremely cruel, they show no trace of any of those better qualities which distinguish the civilised peoples of the galaxy. This utter lack of principles, bar their own warrior codes, is the main reason why they make such formidable opponents. The candidate is therefore warned of their consumate treachery and cautioned that under no circumstances are they to be trusted.

The Klingon warrior creed dictates that they are the master race and that all other peoples are fit only for slavery. Their arrogance and absolute disregard for their own safety makes them formidable opponents, they regard death by warfare an extremely agreeable end.

It should be noted that all Klingon spaceships are heavily armed for attack, retreat being considered a crime punishable by death. Because of their quarellsome nature and compulsive

agressiveness, by virtue of their low reasoning powers, it is possible to defeat them so long as they attack in small numbers. Sucsessful applicants will therefore be able to apply those methods which have been found to be effective in the field in actual combat conditions.

The favourite Klingon tactic is the dreaded "in-line swarm" so called because of the formation their fleet assumes for the attack. Basically it consists of a long queue of Klingon ships with its head facing a lone starship. Whilst in this formation it is only possible to bring weaponry to bear on the leading ship and then only on the forward shields which are the strongest. The attack culminates in a fly past which allows each attacker a close range target, and then a mellee at short range in which their superiority in numbers is a distinct advantage.

The most successful counter to this kind of attack has been found to be as follows:-

1. Using the superior speed of the starship to fly directly toward the attackers.
2. When at close range, turn sharply and diagonally.
3. As the enemy turns to face, turn back towards them at a ninety degree angle.
4. Fly in toward them at high speed presenting only the stronger forward shield to their fire.
5. Overfly their line, and turn about at high speed because of the starships better manouverability, they should still only be starting to react.
6. Pick off their engines leaving them hopelessly vulnerable as their aft shields are extremely weak.

Another favourite Klingon tactic is to attack singly from many directions. By the law of averages, at least one will get through, and this ship will deliberately ram the starship rather than take on a superior opponent. The applicant should be aware of this threat, as counter measures are obvious and simple if the enemy's intentions are realised quickly enough.

2:-ROMULANS

Romulans are probably the greatest enigma ever posed. Nobody has ever seen one, as they seem to prefer death to capture. They almost always travel alone and only seem to attack military installations and ships. Their technology is relatively primitive, and their ships are slow by modern standards, but they still make formidable opponents and are not to be underestimated.

3:-PIRATES

Pirates are extremely common in the outer reaches of Federation territory as their detection is very difficult because of their ability to masquerade as innocent traders. They have very

fast ships and have been known to travel in packs. They sometimes equip themselves with very formidable weaponry, so great care is needed when challenging them.

STARSHIP OPERATION

This section of the course training manual is the mandatory refresher on the principals of starship operations. Although the sophistication of the control systems available to the commander of a modern warship makes a great deal of technical knowledge uneccassary, descision making is still the commander's primary function and this must be based on informed and accurate facts.

The modern star ship has three separate control systems which together with some entirely automatic proccesses allow complete control of every facet of operation. Firstly the helm console allows navigation at warp speeds, and intelligence functions. Secondly the battle display allows navigation at impulse (sub light) speeds, and all combat operations, and thirdly the ship's computer allows precise allocation and distribution of energy.

In order to make the simulation realistic, those functions which would normally be performed by specialist operators have been greatly simplified, and when accessed,the flow of time is suspended for a fixed period. After this period ends,the simulator will "time-out" and drop back into whichever mode, helm or battle, was current when the function (usually concerned with the ship's computer) was entered.

The main energy source of Constitution class starships is, of course, dylithium crytals. They produce a fixed amount of energy for each time unit, which is then distributed to individual parts of the ship according to allocation records held in the ships computer. The records concerning the six major functions, the shields, and the phasers are completely accessable, through the ships computer, allowing complete flexibility in the tactical design of the starship.

The amount of energy available to each part of the star ship determines its strength, its ability to withstand damage, and the speed at which any damage incurred upon that unit is repaired. In addition to the normal allocations, extra energy may be transfer-red from the main banks, in which reserves accumulate, to other parts of the ship indirectly, and directly to the shields via the ships computer. It should always be borne in mind that to allocate extra energy to one unit, it must first be de-allocated from another unit, the amount of energy available being constant and fixed.

The six major functions will now be described in greater detail:-

BATTLE COMPUTER

This is a special independent unit for the targeting and control of all weaponry and anti-detection systems.Any damage incurred will adverseley affect the effectiveness of the ship in combat. There is no great advantage in assigning extra energy above the minimum needed for normal operation.

WARP ENGINES

To travel across interstellar space, the warp drives must be utilised from the helm console. The greater the warp factor, the faster the destination will be reached, but with a corresponding increase in energy usage. Therefore enough energy must be assigned to cover this energy usage. If there is not enough energy for the selected warp factor then the warp drives will shut down with the "energy error" message.

IMPULSE ENGINES

The secondary means of propulsion these- engines are not capable of warp travel. All movement whilst in battle stations use this method of propulsion. All energy restrictions which apply to the warp drives are relevant.

SCANNERS

A subsystem of the ship's computer. The effectiveness of all targeting and navigation accuracy depends on the correct functioning of this unit. Performance will not be significantly enhanced by extra energy but will be seriously degraded by energy shortage or damage.

DAMAGE CONTROL

As energy is assigned to each part of the ship, this unit will try and use it to repair any damage. The more energy available, the more successful these attempts will be. Damage repair has a higher priority than normal usage.

LIFE SUPPORT

Any damage or energy shortage will seriously affect the life expectancy of the crew. It is therefore suggested that enough energy should always be available to ensure minimum operation.

WEAPONRY

The weaponry of the starship consists of eight phasers and four photon torpedo tubes.These are arranged as one bank of four torpedo tubes facing forward, one bank of four phasers facing forward, one bank of two phasers on the port side, and one bank of

two phasers on the starboard side. Generally any weapon may be used provided it is not seriously damaged and there is enough energy available to it. The significance of their placement concerns damage to individual screens and the weaponry associated with those screens, thereby ensuring the greatest possible chances of the survival of a means of attack (or defence). The larger number of weapons facing forward is due to the significantly stronger forward facing shield, although this strength may be adjusted as and when it becomes neccassary.

PHASERS

These may not have any immediate effect in, operation as they must overcome the energy of the attacked ships shields, which when hit will tend to be depleted by the energy of the phasers, but will need to neutralized before any significant damage can be inflicted. Their great advantage is that they may be fired as many times as there is energy available to them

PHOTON TORPEDOS

A has the capability to completely destroy shields, and even to cause enormous damage from the same detonation. As they have a very large blast radius, it is often possible to inflict damage on surrounding targets as well. Their great disadvantage is their limited numbers, and also their localised position which although well placed, renders them vulnerable to concerted attack.

SYSTEMS OVERVIEW

THE SHIP'S COMPUTER

From the ship's computer it is possible to alter the energy allocations of the major functions, and transfer energy from the main bank to the shields. The options available are explained further in the command reference section.

THE HELM CONSOLE

The computer screen shows an area of space some 250 parsecs in radius. The ship is located in the centre of the screen and all movement is relative to the centre i.e. the ship never moves. The floating crosshairs are controlled by the cursor keys and the line marked "scanners" shows the identity of recognized objects. Further information on the item of interest may also be available from the data banks. Because of the enormous distances involved, actual screen refresh is not continous but at regular intervals. The diplay also shows the distance of the ship from the scanners and the heading in degrees. Also shown is the speed as a warp factor and as a bar chart along with a chart showing the state of the main energy banks and the amount of propulsion energy. The activity entry refers to the scanners. Exit to the battle display is through slowing the ship to below warp speed.

THE BATTLE STATIONS DISPLAY

The display shows an area one parsec across. The screen is refreshed as quickly as data becomes available. The operation of the weapons is based upon the principlal of a selected function which is changed by means of the "SELECT" key. the meaning of the display is:-

SHLD1,2...6 ARE THE SIX SHIELDS
The letter following is a status code.
T1,T2....T4 ARE THE FOUR TORPEDO TUBES
Followed by the number available at that tube and a status code.
F1,F2....F4 ARE THE FOUR FORWARD PHASERS
P1,P2 ARE THE TWO PORT PHASERS
S1,S2 ARE THE TWO STARBOARD PHASERS
The number following is the energy available to the phaser divided by thirty two and a status code.

The status codes are:-
"O"- The device is functioning perfectly.
"L"- Energy is getting low.
"N"- Non functioning. The energy available to the device is too low.
"X"- The device is destroyed.

It should be noted that it is possible to select a shield. This is to allow the "BOOST" key to effect emergency repairs to damaged shields. Should the "FIRE" key be pressd whilst a shield is selected, one of the phasers will be fired. Entry into the helm console display is by means of acceleration with the impulse engines to warp speed or by means of the f8 key which does the same thing with one keypress.

MOVEMENT

All movement is functionally the same, whether in battle or helm modes, differing only in the velocities available. Course selection revolves around the on screen scanners. When the f2 key is depressed, the coordinates of the scanners at that moment in time are locked into the navigation systems and the ship will turn to face them. Movement will now be towards that spot at the current speed until new coordinates are locked in. It should be stressed that the actual coordinates of the scanners are not relevant-only their direction from the ship.

STARBASE DOCKING

This is accomplished by remaining witin one parsec of the starbase for enough time for the neccassary repairs and restocking to be carried out. All damage will be repaired and

energy replenshed.

SCANNERS

All major targeting and scanning functions are done by the scanners. These are represented by floating crosshair sights on the computer screens. Movement is effected by means of the cursor control keys on the main console keyboard. The relevance of the scanners in each particular mode is as follows:-

HELM

The scanners are used for both data retrieval and navigation. The position of the crosshairs represents a course through space from the ship. Navigation is explained further in the section on movement. Intelligence gathering is affected by moving the sights over the object of interest The screen will show the identification of the object. By pressing f3, any data contained in the main data banks will be displayed on the object. This may be sparse, but will supply important information on which of the alien craft's screens is orientated towards you, thus allowing a concerted attack on specific sectors in order to breach them.

BATTLE DISPLAY

The functions of the scanners are basically the same as with the HELM display, but with the addition of targeting abilities. Whenever a weapon is fired, it will automatically be aimed at the sights, so accurate control of them is vital. Damage incurred to the scanners and to the battle computers will seriously degrade the effectiveness of the starship's attack capabilities.

STATUS

The normal condition is green. A status of yellow indicates a hostile presence in the vicinity. A status of red results when the ship is under attack.

POINTS

The points the simulator awards determine the future of the candidate. The score given signifies the following:-

Less than one hundred= due for early retirement.

Less than one thousand= try again after at least a two year delay.

More than one thousand= immediate promotion to the rank of captain, and command of a starship.

COMMAND OPTIONS

HELM CONSOLE

f0 Increases the warp factor.This should be followed by a number from zero to nine which is the amount of units the speed is to be increased by. Thirty two units equal one warp factor.

f1 Decreases the warp factor. This should be followed by a number from zero to nine which is the speed increase. If the speed drops below W1, then the impulse engines cut in, and the battle display is shown.

f2 Locks the coordinates of the scanner into the navigation computer, causing the course of the ship to be set to those coordinates. If the ship is at warp speed but stationary, the ship will move towards the scanner, otherwise the ship will alter course toward the scanner position.

f3 Shows any information available in the databanks on the object at the scanner's position. The flashing sector is the one facing the ship.

f4 Boosts the warp energy by 32 units from the main energy bank. This enables greater speeds to be attained.

f5 Available only on Dreadnought class starships.

f6 Available only on Dreadnought class starships

f7 Sets warp speed to zero. An emergency stop. The ship continues to move at sub-warp velocity.

f8 Sets speed to warp factor 4. This acts as an emergency boost.

f9 Exits helm console and selects ship's computer. The message "select" will be displayed and the function keys will take on those tasks marked out for the ship's computer.

BATTLE DISPLAY

f0 Increases impulse speed. If the speed rises above Impulse 32, then the warp engines take over and the helm console is displayed.

f1 Decreases the impulse speed. If the speed becomes zero the ship is halted.

f2 Locks the coordinates of the scanner into the navigation computer, causing the course of the ship to be set to those

coordinates. If the ship is at warp speed but stationary, the ship will move towards the scanner, otherwise the ship will alter course toward the scanner position.

f3 Shows any information available in the databanks on the object at the scanners position. The flashing sector is the one facing the ship. Please note that this information is limited.

f4 Boosts the energy of the selected weapon or shield by 32 units. This is useful for directing emergeny energy for repairs or shield strengthening

f5 Selects a weapon as the current weapon for firing .Can also be used to select a shield for boosting. The energy of the weapon or shield is shown. The selected function is highlighted as a flashing character.

f6 Fires the selected weapon. If not enough energy is available a message is displayed and the command is terminated. If a shield is currently selected, one of the forward phasers will be fired.

f7 Stops the ship. The velocity of the ship is reduced to zero.

f8 Sets the ship's speed to warp factor 4. The helm display is entered. Used mainly in an emergency and as a quick means of entering the helm console.

f9 Selects the ship's computer. The battle display is exited. The message "select?" is displayed, and the function keys take on their meanings under the ship's computer mode.

SHIPS COMPUTER

f0 Exits the ship's computer. Selects helm console mode.

f1 Exits ship's computer. Selects battle display mode.

f2 Shows status, energy and damage of all major functions. If the status of a function is abnormal, it will be flashing.

f3 Allows the transfer of energy from the main bank to the shields. Used mainly to strengthen individual sectors and to effect damage control. A shield is selected by pressing its corresponding number on the keyboard. The selected shield will flash. The direction of the transfer is controlled with the up-arrow key for increase, and the down-arrow key for decrease. The amount is a numeral key- zero to nine.

f4 Enables the energy allocation of the major functions to be altered. Although the total amount of energy produced by the dylithium crystals is fixed, the amounts each function may consume is completely variable. The bars of the graph are alphabetically labeled. Allocation is moved from the corresponding letter of the function, to the next corresponding letter, the amount being a numeral zero to nine. The minimum allocation for normal operation is shown by the dotted line.

f5 Enables the energy allocation of the shields to be altered. This allows tactical strengthening of individual parts of the starship in the same manner as f4

f6 Enables the energy allocation of the phasers to be altered in the same manner as f4. Allows, for instance, damaged weaponry to be written off and their energy allocations to be used elsewhere.